

17 April 1969  
D R A F T

1. It is anticipated that by FY 1972 the NPIC R&D program will have transposed from a short term quick pay off solution oriented program and have laid the foundation for a systems oriented program. In as much as it is premature to predict individual projects that far in the future we prefer to program our R&D effort into eight general program efforts representing a functional breakdown of the imagery analysis process.

The following chart represents the eight categories, their titles, and how we prefer to program the money against the categories for the period of FY 1972 through FY 1975. Included in the programs are the minimum sums considered necessary to prepare for and eventually handle Real Time Systems.

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Category I--Image Interpretation Process  
Research

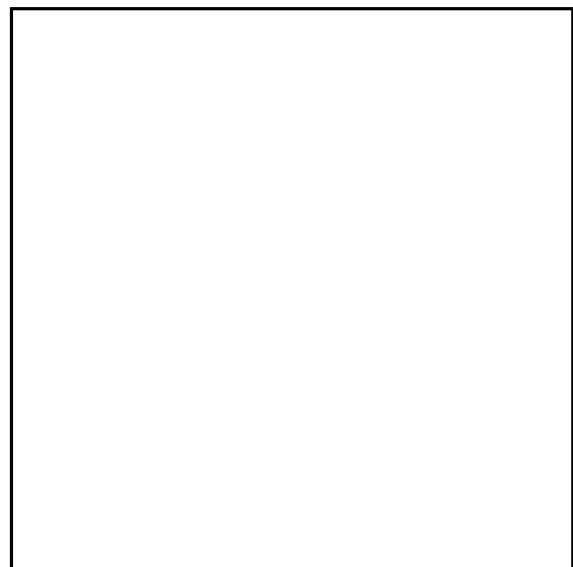
Category II--Image Analysis & Manipulation

Category III--Information Technology

Category IV--Reproduction Materials &  
Equipment

Category V--Image Interpretation  
Equipment & Techniques

Category VI--Measurement Equipment &  
Techniques



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Category VII--Test & Evaluation  
Equipment & Techniques

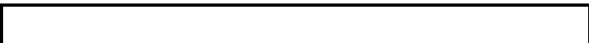
Category VIII--Management Support  
Management Support

TOTAL





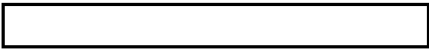
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2. The type of projects for consideration in each of these programs efforts is as follows:

I. Image Interpretation Research--As new systems are designed and proposed, continued research will be required in the human factors relating to image interpretation. 

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 will require considerable efforts to insure adequate exploitation of these materials without adverse effects on the imagery interpreters or loss of efficiencies.

II. Image Analysis and Manipulation--Continued efforts can be anticipated in digital image restoration, image quality measures, micro-image characteristics, ATR image specifications and etc., with increased emphasis on  systems as the system parameters become firmer. Also to be anticipated are efforts in hybrid image manipulation, improve processing parameter specifications, improved quality measurement devices, and in determination of color and bi-color values. Also for consideration in this time period are additional studies 

III. Information Technology--Within this program element lies the greatest potential for increasing the productivity of the Center without significant personnel increases. The types of projects under consideration

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are advanced film handling equipment, automated editing and reporting techniques, expanded collateral retrieval and display techniques, and improved printing techniques. This program area in general will also encompass work developing a improved and expanded integrated information system. Additional work is also anticipated in further development of an integrated chip system within the Center.

IV. Reproduction Techniques and Equipment--It is anticipated that by this time period use of dry photo process will become an operation reality and new lines of reproduction equipment as well as product improvements of equipment currently programmed for will be required. New and advanced chip production equipment is also anticipated.

V. Image Interpretation Instruments and Techniques--The process of building better image interpretation equipment is a continual process and it is anticipated that new systems will require considerably different equipment than we are currently developing. Continued work in the Image Analysis and Image Interpretation Process programs will play a major role in determining requirements for new projects in this program area. The types of projects anticipated are advanced projection viewers, stereo scanning equipment, target or change detection equipment, and continued optical system development.

VI. Mensuration Equipment and Techniques--This program area will depend heavily on the development of new acquisition systems and the precise measurement studies requested in previous programs for the development of requirements for specific projects. Examples of

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anticipated projects are advanced analytic stereo plotters, data block readers, and rapide response devices for Real-Time imagery.

VII. Test and Evaluation Equipment and Techniques--As the Center's equipment becomes more specialized and complex it becomes increasingly difficult to depend on available instrumentation for testing and maintenance purposes. It therefore becomes necessary to develop specialized equipment to effectively maintain our development and maintenance programs. The specific projects in this program area are totally dependent on equipment still in or yet to go in the development stages and it is therefore premature to predict the actual projects.

VIII. Management Support--This program area includes external management support of an operations research nature not directly applicable to one of the other program elements. The type of projects that may be considered are advanced exploitation technology planning, the design and integration of systems, including training and maintenance, and the development of techniques to facilitate internal control of the Research, Development, Test, Evaluation and Maintenance programs.